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Foreign direct investment, domestic investment and development: enhancing productive capacities

Maximizing synergies between foreign direct investment and domestic investment for development: enhancing productive capacities

Note by the UNCTAD secretariat

Executive summary

The long-run relationship between capital formation, the capital stock and economic growth is of paramount importance to the development process. As domestic investment levels are low, particularly in least developed countries, there is a need to harness foreign direct investment (FDI) for countries' economic growth. However, depending on the situation, FDI may substitute for, complement or even strengthen the formation of capital by domestically-owned firms; policymakers therefore have to ensure that FDI does not lead to the "crowding out" of domestic investment. Among others, they should seek to ensure the availability of finance and other resources for, and fair accessibility by, domestic as well as foreign firms.

There are situations under which foreign and local firms can work together to exploit their respective comparative advantages and achieve mutually beneficial outcomes through interaction. This issues note examines this interaction in three important cases relevant for the current world economic agenda: infrastructure, agriculture and climate change.

(a) In infrastructure (transportation, telecommunications, water and power) a close association between foreign and domestic investment – such as through public-private partnerships (PPPs) – can substantially help in meeting local development needs, especially through the transfer of complex technologies and expertise to the local economy and enterprises;

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(b) In agriculture, transnational corporations (TNCs) can play a significant complementary role, providing much needed capital, technology and other inputs for increasing productive capacity in the host country through contract farming. In terms of capital formation, domestic and foreign investments can interact with each other, enabling "crowd in" and development by PPP in related activities such as irrigation;

(c) In climate change close interaction between foreign and domestic investors can contribute to meeting low carbon emission targets and, more importantly, supporting developing counties in their pursuit of long-term sustainable growth and development.

In all of these cases, policymakers should ensure policies achieve the optimum level in which the right balance between foreign and domestic investment is achieved, avoiding crowding out.

Contents

1. The second session of the multi-year expert meeting on "Investment for development" will consider "FDI and domestic investment and development: enhancing productive capacities". This follows the first session on "The development dimension of international investment agreements", that was held from 10 to 11 February 2009. At its fifty-fifth session, the Trade and Development Board agreed that "the expert meeting will analyse the development impact of both domestic investment activities and, in particular, foreign direct investment (FDI), including the interaction between the two. It will also analyse public-private partnerships. The impact of these activities on productive capacities in the food and agricultural sector, among others, may also be analysed." (TD/B/55/9: 9, 1 October 2008)

2. This note outlines the issues to be addressed on the development implications of investments combining both foreign and domestic sources, including designing and preparing effective and active policies to boost the productive capacities and international competitiveness of developing and transition economies. The meeting will examine mainly two different case studies – agriculture (including food production) and climate change – and "discuss how policies can help ensure that the direct and indirect effects of both foreign and domestic investment bring development gains" (TD/B/55/9: 9–10) with due regard given to public-private initiatives. (The note also touches upon infrastructure, but this was already considered at the first session of the Investment, Enterprise and Development Commission in 2009.) The note examines how these two sources of investments – domestic and foreign – have evolved in the past two to three decades, and asks how to ensure that synergies between them are enhanced with no or little crowding out effects.

I. Global perspectives

3. The long-run relationship between capital formation, the capital stock and economic growth is of paramount importance to the development process. To the extent that TNCs, with their international investments, are part of the picture, this macroeconomic relationship is not straightforward. The issue of investment in domestic economies, particularly developing host economies, becomes complex when assessing the interaction between foreign firms and domestic ones as, depending on host country moderating factors, FDI (which may be used as proxy for foreign-owned capital formation) may substitute for, complement or promote the formation of capital owned by domestically-owned firms. The mechanisms for positive, neutral or negative impacts by foreign-owned capital upon domestic firms are usually presented as "crowding in", "neutral" and "crowding out" effects (UNCTAD, 1999).

4. While the policy conclusions depend very much on the assumptions made, a central question is whether there is any situation in which FDI will not lead to any loss of domestic investment and even promote such investment, and if so, what are the factors that need to be in place to realize the "optimum" levels of FDI and domestic investment combined.

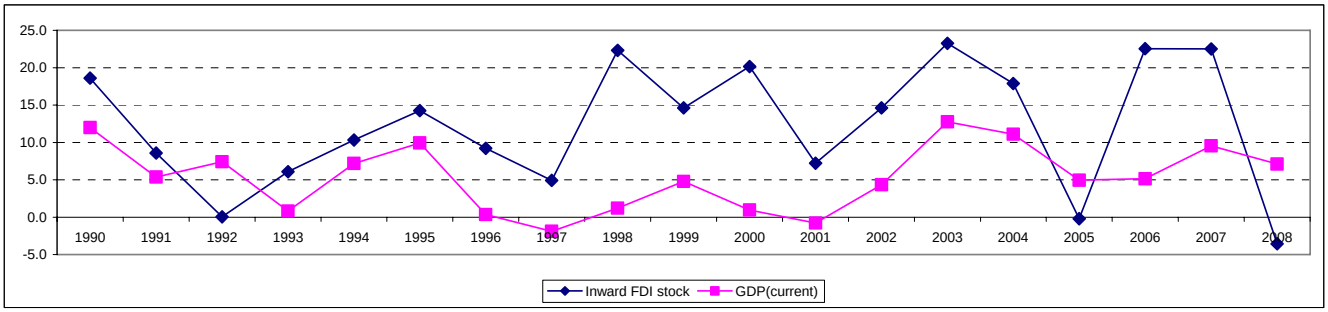
A. The relationship between FDI, domestic investment and value added

5. If the long-run growth of national income is the issue in question, then the distinction between domestic and foreign capital and their respective mechanisms through which this growth is achieved may not be considered important. However, it is of considerable importance to distinguish these two investments if developing countries are to foster a healthy domestically-owned part of the economy.

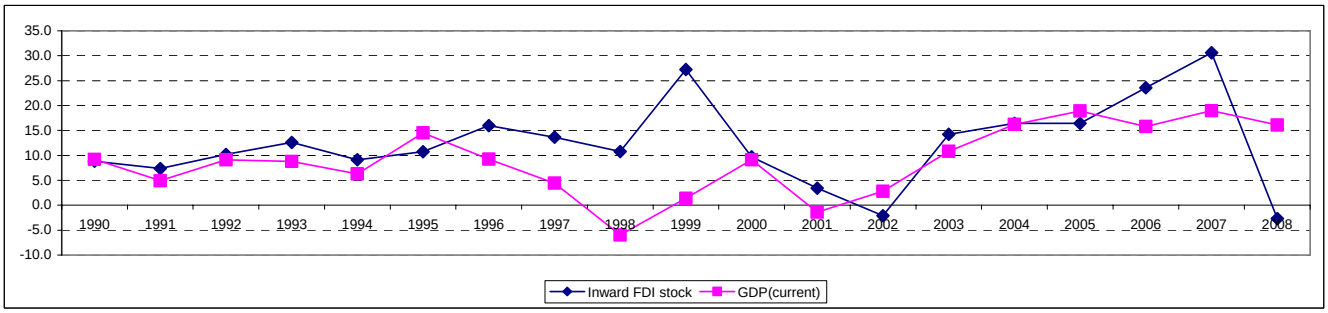
6. The relationship between the growth of an economy and FDI is much debated in the literature.[1] Intuitively the relationship between these foreign and domestic investments seems to be more relevant and important in developing countries than in developed countries (figure 1). However, the fact that FDI constitutes at most a 15 per cent share of gross capital formation at the global level implies that much of the economic growth should be linked with domestic investment, even if foreign affiliates produce more per dollar of investment than local counterparts. However, the existence of foreign affiliates may affect domestic firms and, in some cases, may exclude them from markets. As a whole, if foreign affiliates cause a reduction of investment by local firms through crowding out effects (box 1), host countries may lose opportunities for longer-term growth by their own firms. There is the need for a balance between the level of investment by foreign affiliates and that by domestic firms.

Figure 1. GDP and FDI inward stock growth rates, 1990-2008
(Percentage)

(a) Developed economies:



(b) Developing economies



Source: UNCTAD, FDI/TNC database.

[1] The empirical studies on the FDI effect on growth are carried out from either macroeconomic or firm perspectives. While at the firm level, depending on country- and industry-specific factors, the results do not support the conclusion that FDI accelerates overall economic growth, the macroeconomic studies, using aggregate FDI flows for a broad cross-section of countries, generally suggest a positive role for FDI in generating economic growth under certain conditions.

Box 1. Crowding out and crowding in effects

Apart from their direct impact on investment in host countries, foreign affiliates may also affect investment by domestic firms indirectly. If their investment crowds out investment by domestic firms, then an increase in investment of foreign affiliates by one dollar will lead to an increase of total investment in the host country smaller than one dollar. In the extreme case, a dollar of foreign investment may crowd out more than a dollar of domestic investment, reducing total investment. In the case of crowding in, total investment increases by more than the increase in investment by foreign affiliates. If the effect is neutral, any increase in affiliates' investment is reflected in a dollar-for-dollar increase in total investment (UNCTAD, 1999).

Activities of foreign affiliates may crowd out domestic investment through increasing competition for funds, other production factors such as labour, domestic and imported goods and services (as inputs), and in final markets (domestic and exports). Crowding out can have two different forms: in one form, the ownership-specific advantages of TNCs (e.g. advanced technologies, management know-how skills and transaction cost minimizing and other intangible advantages) allows them to outcompete local firms, leading to more market concentration but higher efficiency at the national level. In a more extreme form, however, foreign affiliates transform their competitive advantages into a monopoly power. In such cases, the concentration of markets may not be accompanied by higher productivity.

Conversely, foreign affiliates can contribute to the growth of domestic firms and investment (crowding in) through vertical inter-firm linkages with such firms or through the creation of subnational or subregional clusters of interrelated activities. By supplying intermediate products and thanks to technology and knowledge transfer received from foreign affiliates, local firms improve their products and production processes. A special case of crowding in concerns the provision of capital to areas suffering from capital shortage, especially in cases when it is accompanied by the creation of new industries. Moreover, FDI may result in an increased demand for exports from the host country, helping to attract investment in the export industries.

Empirical evidence[a] indicates that in the majority of cases the effect of FDI is neutral – that is, a dollar of FDI leads to an increase of investment by about one dollar in the host country, and therefore neither crowding out nor crowding in takes place (box table 1). Based on a particular model employed here, neutral effects seem to prevail in Africa, Latin America and the Caribbean and transition economies (South-East Europe and the Commonwealth of Independent States (CIS)). While crowding out dominates only in West Asia, crowding in dominates only in South, East and South-East Asia. This finding is robust, utilizing a test that assesses whether the long-term crowding in/out effects of FDI on total investment are statistically significant (e.g. a level of "1" means that there are no such effects, whereas a level of more than 1 indicates that crowding in is occurring).

Box table 1. Developing and transition regions: effects of FDI on investment, 1971–2008

Region	*Long-term coefficient linking FDI with investment*	*Long-term effect*
Africa (23)	**0.31**	**Neutral[a]**
Asia (18)	**0.67**	**Neutral[a]**
West Asia (5)	**0.26**	**Crowding out**
South, East and South-East Asia (12)	**1.25**	**Crowding in**
Latin America (16)	**0.34**	**Neutral[a]**
Transition economies (12)[b]	**0.34**	**Neutral[a]**

Source: UNCTAD based on UNCTAD (1999).
[a]Parameter not significantly different from 1 (Wald test).
[b]Data for transition economies begin in 1990.
Note: Figures in parentheses after the region's name indicate the number of countries covered.

Although it requires further research, these results should be also interpreted with caution as FDI flows – one of the variables used here – underestimate the total value of investment expenditures of foreign affiliates and they also vary in different contexts. Nevertheless, differences in the effects of FDI on domestic investment between regions and individual countries imply that national development strategies and investment policies (e.g. policies strengthening linkages between foreign affiliates and domestic firms) should be coordinated to ensure the maximizing of synergies between FDI and domestic investment.

Source: UNCTAD.

[a] The econometric model used here to examine the empirical evidence, which was developed in the *World Investment Report 1999* (UNCTAD, 1999), is as follows:

$$I_{i,t} = \alpha_i + \beta_1 F_{i,t} + \beta_2 F_{i,t-1} + \beta_3 F_{i,t-2} + \beta_4 I_{i,t-1} + \beta_5 I_{i,t-2} + \beta_6 G_{i,t-1} + \beta_7 G_{i,t-2} + \varepsilon_{i,t}$$

where I = investment to GDP (gross domestic product) ratio; F = FDI inflows to GDP ratio; G = growth of GDP. The coefficient to calculate long-term crowding in, crowding out or neutral effects is calculated as $\hat{\beta}_{lt} = \frac{\sum_{j=1}^{3} \hat{\beta}_j}{1 - \sum_{j=4}^{5} \hat{\beta}_j}$.

7. For any economy, investments that better meet the objectives of development are more welcome than other investments, no matter whether the source of these investments is domestic or foreign firms. However, it is difficult to determine which firms perform better from the development perspective as the results differ depending on the context and assumptions made. However, if data on foreign affiliates of United States TNCs are any indication[2] of the performance of foreign affiliates, foreign affiliates are more capital efficient than domestic firms (represented as all firms) in certain regions and countries (table 1), as well as in certain industries (table 2).

Table 1. Comparison of foreign affiliates [a] and domestic firms in capital efficiency [b], by host region/economy, 1989-1991 and 2005-2007
(Billions of dollars)

Host region/country	United States TNCs						All firms [d]					
	FDI flows		Value added of foreign affiliates [c]		Capital efficiency [b]		Gross capital formation		Value added [e]		Capital efficiency [b]	
	1989-1991	2005-2007	1989-1991	2005-2006	1989-1991	2005-2007	1989-1991	2005-2007	1989-1991	2005-2007	1989-1991	2005-2007
Total world	33.8	206.0	344.0	953.6	10.2	4.6	5 001	11 044	21 993	49 792	4.4	4.5
Developed countries	23.2	148.2	283.0	710.2	12.2	4.8	3 836	7 342	17 050	35 729	4.4	4.9
Developing economies	10.3	54.1	59.2	233.3	5.7	4.3	866	3 396	3 794	12 636	4.4	3.7
Africa	-0.3	4.0	5.9	36.0	-19.1	8.9	86	211	460	1 133	5.3	5.4
Latin America and the Caribbean	7.6	18.0	30.0	91.9	4.0	5.1	221	639	1 118	3 241	5.1	5.1
Brazil	1.6	2.4	14.7	22.9	9.3	9.5	95	184	431	1 102	4.5	6.0
Mexico	2.0	10.1	6.1	26.9	3.1	2.7	48	209	267	986	5.6	4.7
Asia and Oceania	3.0	32.0	23.3	105.4	7.7	3.3	483	2 244	1 801	6 819	3.7	3.0
China	0.1	3.8	0.1	17.3	2.0	4.5	111	1 157	429	2 759	3.9	2.4
Hong Kong, China	0.4	6.6	3.1	9.4	7.2	1.4	20	40	78	192	3.8	4.8
India	0.0	2.2	0.1	4.8	2.8	2.3	74	312	307	956	4.1	3.1
Singapore	0.6	8.2	3.1	15.0	5.0	1.8	12	32	37	142	3.1	4.4
South-East Europe and CIS	0.1	3.4	0.0	10.1	0.3	3.0	298	306	1 149	1 427	3.9	4.7

Source: UNCTAD, FDI/TNC database.

[a] Represented as United States TNCs as data on value added of foreign affiliates are not available for other countries.

[b] Calculated as value added per dollar of investment expenditures. The higher the value is, the more one unit of investment produces.

[c] Data are based on majority-owned foreign affiliates.

[d] Only those countries for which data on gross fixed capital formation and value added were included.

[e] GDP.

8. At the global level, foreign firms and domestic firms do not differ much in terms of production efficiency from the viewpoint of capital use,[3] though in developing countries, foreign affiliates seem to produce more than domestic firms per unit of investment, particularly in Africa (table 1).

Table 2. Comparison of foreign affiliates [a] and domestic firms in capital efficiency [b], by sector/industry, 1989-1991 and 2005-2007
(Billions of dollars)

Sector/industry	United States TNCs						All firms [d]					
	FDI flows		Value added of foreign affiliates [c]		Capital efficiency [b]		Gross capital formation		Value added [e]		Capital efficiency [b]	
	1989-1991	2005-2007	1989-1991	2005-2006	1989-1991	2005-2007	1989-1991	2005-2007	1989-1991	2005-2007	1989-1991	2005-2007
Total	33.8	206.0	344.0	953.6	10.2	4.6	3 870	9 721	16 493	42 188	4.3	4.3
Primary [f]	0.1	15.5	59.1	116.6	678.9	7.5	309	937	1 322	3 658	4.3	3.9
Agriculture, hunting, forestry and fishing	30.0 [g]	0.1	34.0 [g]	1.0	1.1	7.6	144	407	583	1 455	4.1	3.6
Mining, quarrying and petroleum [f]	0.1	15.4	59.1	115.6	827.9	7.5	165	529	739	2 204	4.5	4.2
Secondary	15.2	47.4	215.2	456.8	14.2	9.6	853	1 856	3 519	7 541	4.1	4.1
Tertiary	18.5	143.0	55.0	370.7	3.0	2.6	2 709	6 928	11 653	30 988	4.3	4.5
Construction	102.0 [g]	-0.3	1209.0 [g]	3.3	11.9	-11.3	256	546	1 016	2 311	4.0	4.2
Trade	3.9	15.6	31.1	184.4	7.9	11.8	569	1 335	2 483	5 963	4.4	4.5
Transport, storage and communications	604.0 [g]	3.8	4312.0 [g]	21.1	7.1	5.5	258	665	1 095	2 867	4.2	4.3
Others	12.6	123.9	22.0	161.9	1.8	1.3	1 626	4 383	7 058	19 847	4.3	4.5

Source: UNCTAD, FDI/TNC database.

[a] Represented as United States TNCs as data on value added of foreign affiliates are not available for other countries.

[b] Calculated as value added per dollar of investment expenditures. The higher the value is, the more one unit of investment produces.

[c] Data are based on majority-owned foreign affiliates.

[d] Only those countries for which data on gross fixed capital formation and value added were included.

[e] GDP.

[f] For all firms, primary includes utilities.

[g] Data only for 1989

[2] This is the only country for which such data exists.

[3] Value added per unit of investment expenditure is used instead of value added per unit of capital stock, as the data on capital stock for all firms are not available.

9. With regard to production efficiency at the industry level, foreign affiliates – as indicated by United States TNCs – perform better than domestic firms (represented as all firms) in primary and manufacturing sectors. However, in the services sector, this efficiency fluctuates by individual industry, and in certain years they are less productive than domestic firms (table 2).

B. Competition for finance in local markets between foreign affiliates and domestic firms

10. Policymakers should note that foreign affiliates can differ from domestic firms in securing funds for investment. Foreign affiliates not only receive and use funds from their parent or affiliated firms, but also secure them from local sources such as commercial banks and financial markets. Because of this, domestic firms may find availability to such sources of funds reduced. The current financial and economic crisis has further reduced the access to new credits for both domestic and foreign firms (UNCTAD, 2009a). Data on local financing by Japanese and United States foreign affiliates show that half of their external funds are indeed locally sourced in both developed and developing host regions (tables 3 and 4). It should be noted that even though foreign affiliates operating in Africa, Latin America and the Caribbean procure fewer local funds than in other host regions, they procure 35–40 per cent of external finance from local markets.

Table 3. Sources of external financing by foreign affiliates of United States TNCs, 2007
(Billions of dollars)

			Developing countries				
Source of finance	World	Developed countries [a]	Total	Africa	West Asia	South, East and South-East Asia	Latin America and the Caribbean
Total finance from external sources	9 595.4	7 768.3	1 827.0	100.4	54.2	565.1	1 107.3
Home economy (United States)	2 626.5	2 008.5	618.0	29.1	17.5	180.2	391.2
Parent firms	2 021.1	1 469.7	551.4	25.2	17.4	145.3	363.5
Others	605.4	538.8	66.6	3.8	0.2	35.0	27.7
Host economy	4 167.9	3 473.2	694.7	37.5	23.0	246.8	387.5
Other countries	2 801.0	2 196.0	604.9	33.9	13.6	228.8	328.6
Share of local finance in total (%)	43.4	44.7	38.0	37.3	42.5	43.7	35.0

Source: United States Department of Commerce, 2009, table III.C.2.
a Includes South-East Europe and the CIS.

Table 4. Main sources of external financing by foreign affiliates of Japanese TNCs, 2007
(Percentage)

		Developed countries			Developing countries				
Source of finance	World	Total	North America	Europe [a]	Total	Africa	West Asia	South, East and South-East Asia	Latin America and the Caribbean
Mainly local finance	49.7	45	44.4	45.8	51.8	39.5	54.9	52.7	40.9
Local banks	21.4	17.3	17.7	16.8	23.2	22.4	23.5	23.9	14.1
Local branches of international banks	28.3	27.7	26.7	29	28.6	17.1	31.4	28.8	26.8
Mainly from parent and affiliated firms	50.2	54.9	55.6	54.2	48.1	60.5	45.1	47.3	59.1
Financial affiliate	6	12	9.1	15.6	3.4	2.6	3.9	3.5	2.7
Parent firms	44.2	42.9	46.5	38.6	44.7	57.9	41.2	43.8	56.4

Source: Japan, METI 2009, table 2-33.
a Includes South-East Europe and the CIS.

11. Overall, while it is not known to what extent foreign affiliates procure their finance locally compared with domestic firms, given their financial strength as well as the financial guarantees they may receive from parent firms, they certainly encroach on local financial markets (from the perspective of domestic firms). At the same time, however, partly because of their presence, foreign banks may initiate or expand the availability of finance in

local markets. Indeed, the fact that FDI by banks is larger than FDI by any industry (UNCTAD, 2009b: 218) means that many large banks operate internationally and provide financial services more widely, including to developing country domestic markets. Again it is not known to what degree foreign banks provide loans to foreign affiliates and domestic firms. As an indication, however, the Japanese data show that Japanese foreign affiliates source their external finance from local branches of foreign banks even more than from local banks (table 3).

12. Policymakers should seek to ensure a fair availability of finance to domestic as well as foreign firms. Moreover, in order to foster and protect specific industries of importance, e.g. for national security or infant industries that need some initial support to foster their development, governments may ensure that a certain share of local finance is made available to domestic firms.

13. While the above discussion has examined potential competition between foreign and local firms, in practice there are several situations under which these types of firms work together to exploit their comparative advantages and achieve mutually beneficial outcomes in which synergies between domestic and foreign investments are enhanced. The following section considers three prominent areas where such synergies have occurred: infrastructure, agriculture and food, and climate change, with a greater focus on the latter two.

II. Sector-specific perspectives

A. Infrastructure

14. Infrastructure (e.g. transports, telecommunications, water and power) provides a good example of industries where a close association between foreign and domestic investment – either public or private – can substantially help in meeting local development needs. Foreign companies can help fill the gap between the current and required levels of technology, expertise and other resources to meet a country's needs. Following the liberalization of the infrastructure industries in the 1980s, a wave of foreign investments has been observed in these activities (UNCTAD, 2008).

15. Infrastructure industries have a number of characteristics that make their activities operationally difficult, and therefore TNCs' role in building the capabilities of domestic firms can be crucial. In particular, they are technically complex in nature, requiring the involvement of a large range of players of a very diverse nature, and these operations include both a business aspect and a more political one. Consequently the trade-off between protection of investors' interests (profitability, risks, etc.) – especially if foreign – and those of local consumers (good cost/quality ratio of the services provided) should be carefully balanced. Thus, in order to entertain both public and private interests in infrastructure projects, among the various forms of PPP, the concession of a public service to a private company through management contracts or joint operating schemes has emerged. Such concessions include built-own-operate, build-own-transfer (BOT), build-lease-and-own, or build-own-operate-transfer projects. Commonly there is a capacity transfer aspect in such concessions, e.g. where a TNC might build a power plant, operate it for a period and then transfer it to a domestic concern (the foreign entity might train local staff to take on the running of the plant).

16. Examples of PPPs involving foreign and local partners around the world are numerous and rising in both developed and developing countries (UNCTAD, 2008: 96). Focusing on the transport industry, such PPP projects include BOT container harbour projects in Egypt (Port Saïd, Marsa Allam), Morocco (Tanger Méditerranée) and Tunisia (Rades), and BOT airport projects in Tunisia (Enfidah Airport), Armenia (Shirak Airport

and Railway) and Mozambique (Port of Maputo). PPPs in electricity include projects in Brazil, Cambodia (hydropower stations), China, Chile, Ghana, India, Jordan, Mexico, Oman, Philippines, Russian Federation, Viet Nam and Uganda (electricity generation). PPPs in water services can be found, for instance, in Algeria, Armenia, China, Colombia, Gabon, Mexico, Morocco, Niger, Oman, Philippines, Saudi Arabia and United Arab Emirates. These countries, among others, have implemented a modernization and simplification of their regulatory framework during the past years in order to facilitate the development of PPPs.

17. Infrastructure operations need to be carefully planned and regulated. Best practices include, in particular, the design of coherent PPP policies in order to provide clear directions to investors, good coherence of the legal regulatory framework, transparency in public decisions and selection of partners, and a commitment to sustainable development. There is also the need to protect appropriately investors' legal security and the rights of the public in case of investment disputes (which are frequent in this industry).

B. Agriculture and food

18. The expansion and revitalization of agricultural production is crucial for developing countries, both to meet the rising food needs of their burgeoning populations, and as a basis for economic diversification and development. In order to realize these objectives, there is a strong and urgent need to invest more in this industry.

19. Both domestic and foreign investment can contribute to the development of the agricultural sector, and there is considerable potential for interaction between the two. The recent renewed interest by several food-importing countries, mostly from Asia and the Middle East, in FDI in agricultural production provides an additional opportunity to boost agricultural production and productivity and enhance overall economic development in many developing countries around the globe. Further, there is scope for enhancing the investment potential of local farmers – which is currently very limited in many developing countries, due to, among others, their lack of financial resources – and to help them to become active players in the agribusiness value chain.

20. This section focuses on the potential for interaction and the creation of synergies between foreign and domestic investment in agriculture. It deals both with the FDI-related aspects of such interaction, and non-equity forms of cooperation, in particular contract farming. It explores possible areas of interaction and ways to encourage such cooperation in order to promote development objectives.

1. Possible areas of interaction between foreign and domestic investment

21. Insufficient investment in agriculture in developing countries has significantly hindered the attainment of Millennium Development Goal targets. The Common Framework of Action proposed by the United Nations High-Level Task Force on the Global Food Crisis estimated that the global incremental financial requirement for investment in agricultural development for food and nutrition security and to meet other objectives ranges from $25 billion to $40 billion per annum.

22. The domestic private sector, supplemented with official development assistance, is and will remain the predominant source of investment in developing countries, but FDI can play a significant complementary role, in particular with regard to the production of high value added crops and in the modernization of the industry. However, investment by TNCs in agriculture has been limited so far. World inward FDI stock in agriculture comprised only $32 billion in 2007 – 0.2 per cent of total inward FDI stock – despite significant growth in FDI since 2000. Nevertheless, by 2005–2007, world FDI inflows in agriculture

exceeded $3 billion per annum, albeit still constituting less than 1 per cent of total world FDI inflows. In the wake of the food crisis, a significant home country driver of the expansion of South–South investments is the push for food security by countries such as China, the Republic of Korea and the Gulf Cooperation Council countries (UNCTAD, 2009b).

23. TNCs also influence agricultural production – and hence indirectly investment in the industry – through other means, for example through contract farming. Such TNC participation in agricultural production may divert investment away from existing crops, but it may also crowd in other investors through demonstration and spillover effects (as might direct investment in agricultural production).

24. For development purposes, it is important that linkages and spillovers are created between foreign and domestic investors in agriculture. FDI can provide much needed capital, technology and other inputs for increasing productive capacity and output in the host country, and can help domestic producers become integrated into international food value chains. At the same time, care needs to be taken that foreign investment does not crowd out domestic investors, in particular smallholders. Furthermore, the importance of public investment in agriculture needs to be emphasized, as it helps pull infrastructure into rural areas, empowers small farmers and provides an enabling environment for private investment. PPPs can be crucial in this regard.

25. There are several areas where interaction can take place. Amongst the most important areas for interaction are:

(a) Foreign investors and domestic companies/farmers may jointly undertake agricultural production;

(b) Foreign investors and domestic companies/farmers may cooperate at different stages of the food value chain. For instance, the domestic company/farmers may undertake production, whereas the foreign investor comes in at the stage of food processing and/or as retailer. Contract farming is a typical form of such cooperation;

(c) Foreign and domestic investors may cooperate with respect to agricultural research and development (R&D). This includes, in particular, the possibility of PPPs. To fight the food crisis, a daunting challenge is how to create incentives for PPPs that will allow the public sector to use and adapt technologies developed by TNCs to overcome problems faced by poor farmers;

(d) Foreign and domestic investors may cooperate in infrastructure development, and it should be recognized that the impact on agriculture of such infrastructure development may go well beyond an economic impact. At the same time, more efficient and effective infrastructure is essential for agricultural expansion and development.

2. Policy options to promote interaction between FDI and domestic investment

(a) Interaction at the production level

26. While most foreign investors in agricultural production prefer to have the exclusive control over the investment – either as owner or leaseholder – (UNCTAD, 2009b) there are also instances of joint ventures between foreign and domestic investors. One reason can be that the foreign partner alone is not allowed to own or lease land. Examples of such joint ventures exist in fruit production, where the mode of TNC entry varies across regions and countries, depending partly on whether land is allowed to be owned by foreigners. For example, in some Central American countries, wholly-owned affiliates of TNCs are still significant, while in a number of African and Asian countries, TNCs retain a degree of control over production through joint ventures.

27. The need to sign a joint venture contract opens up the possibility to stipulate certain development objectives that the foreign investor needs to fulfil as a precondition to forming the partnership. Through the careful formulation of such contracts, a "win-win" situation can be created by committing the foreign investor to a number of key obligations in exchange for the right to make the investment.

28. One crucial topic relates to the social and environmental impacts of these projects, and to the contributions foreign investors can be contractually obliged to make in order to further the aim of sustainable agricultural development. Some governments have allowed foreign investments in agricultural production, provided these create additional benefits for the host country, such as infrastructure development. Other issues to be considered include the distribution of production and revenues. If the production relates to staple food, one could consider a contractual arrangement with the foreign investor according to which a certain share of the production must be reserved for the domestic market in order to enhance food security (see UNCTAD, 2009b).

29. The recent renewed interest in FDI and TNC participation in agriculture provides an opportunity to boost agricultural production and productivity and enhance overall economic development in many developing countries around the globe. There is potential for joint production, but also for the creation of linkages between foreign producers and domestic input suppliers. The challenge for policymakers is to maximize the benefits and minimize the costs of such interaction.

(b) Interaction at different stages of the value chain

30. Improving the productivity of local farmers is fundamental for enhancing agricultural development in developing countries. Therefore, a key element of developing countries' strategies should be the promotion of linkages through contractual arrangements between foreign investors and local farmers that enable the latter to enhance and upgrade their capacities, in particular through transfer of technology and other knowledge. This is thus an area in which involvement of foreign investors and domestic investment can converge.

31. Policymakers should examine the whole value chain with a view to identifying bottlenecks in effective cooperation between foreign investors and local farmers. Potential obstacles include: (i) smallholders' inability to supply products of a consistent quality and in a timely manner; (ii) lack of modern technology and standards; (iii) lack of capital; (iv) remoteness of production; (v) limited role of farmer organizations; and (vi) lack of adequate legal instruments for dispute settlement (UNCTAD, 2009b).

32. Numerous policy options exist to address these potential impediments for cooperation. Among the most important issues (and examples of "best practices") are:

(a) Financial support for local farmers. For example, the Government of Brazil runs PRONAF (National Programme for the Strengthening of Family Agriculture) to finance farming and non-farming activities (e.g. rural tourism, handicraft production and family agribusinesses) in rural areas;

(b) The provision of education and training. For instance, the Songhai Centre, an international non-governmental organization based in Benin, is globally recognized as a world leader in promoting innovative and ecologically sustainable agricultural enterprises;

(c) The provision of extension services. In the United Republic of Tanzania, for instance, integrated producer schemes have been beneficial to smallholders in terms of increasing their productivity and specialization;

(d) The strengthening of the role of farmers' organizations. In Benin, FUPRO in the cotton industry and other commodity-specific farmers' organizations (in particular those

producing cash crops) have established contract-type relationships with private enterprises for the supply of inputs and marketing of produce;

(e) Information and matchmaking services. For example, the Heze region in the Shandong Province of China is actively seeking FDI in agricultural production and related processing activities in order to turn the region into a major production and export base of organic agricultural products in the country. The local government has prepared a catalogue of projects that provides potential foreign investors with detailed information on the market potential, estimated investment needs, projected earnings and the preferred mode of entry of TNCs.

33. Another area where foreign and domestic investors can interact is agricultural R&D. While many TNC activities in this field are still undertaken at headquarters in the home country, there has been a trend in recent years towards partially shifting R&D to developing countries in order to adapt the development of seeds and products to local and regional conditions (e.g. climate, soil, tastes and traditions), or to develop new varieties of plants (for example, the flower industry in certain countries of sub-Saharan Africa).

34. PPPs for research and development that involve TNCs can be a major policy instrument to foster innovation, to make agricultural R&D more responsive to local needs and the challenge of sustainability, reduce costs and spread the project risks between the partners involved. Policymakers can facilitate these PPPs by providing incentives for innovation through low-interest grants that co-finance both R&D and the pilot testing of innovation. Another option is to promote collaboration with international agricultural research institutions. For example, Embrapa, a leading public agricultural research institute in Brazil, has established various types of domestic and international partnerships with TNCs relating to the development of new technologies, incorporating technologies from other corporations into Embrapa products and partnerships where Embrapa provides licences of its technologies to TNCs. With the aim of providing aid to low-income developing countries through technology transfer, Embrapa carries out several cooperation projects in all South American and in 13 African countries.

35. Host country policies also need to consider the role of intellectual property rights (IPRs) in the promotion of agricultural research, inasmuch as IPR regimes that grant exclusive rights over certain plants and genetic resources can potentially encourage or discourage cooperation between local and foreign firms. Of course, it is important to decide where the line is drawn between what should be protected under IPR regimes and what remains in the public domain.

(c) Interaction in contract farming

36. UNCTAD has proposed the development of model contracts for contract farming (UNCTAD, 2009b). These models should be designed with a view to assist local farmers – as the weaker party – in negotiations with TNCs by identifying the core elements to be included in contracts. These core elements would define the main rights and obligations of the contracting parties, and could also deal with the role of state authorities in this context. The existence of a model contract may not only render negotiations easier, but also contribute to more balanced bargaining, with the ancillary but significant benefit of helping to reduce future disputes between the contracting parties.

(d) Interaction in infrastructure development

37. The development of appropriate infrastructure is crucial for improving the conditions for agricultural production and for making developing countries more attractive to foreign investors. There is considerable potential for PPPs in this area. One area is irrigation. For instance, the Pontal Irrigation Project in Brazil aims at fostering irrigation in

the semi-arid region of the Rio São Francisco Valley in the State of Pernambuco. The project was structured as a PPP, in which Codevasf, a public enterprise of the Federal Government of Brazil, contracts a private partner that will make the required investments in the construction of the channels, operate them and also manage the land distribution among small farmers. The private partner will be responsible for the operation and maintenance of all irrigation channels. The duration of this PPP contract is 25 years.

38. Foreign investment in infrastructure facilities can benefit farmers in neighbouring locations and promote rural development in general. In Mozambique, for example, Companiha de Sena S.A.R.L. (a sugar plantation rehabilitation project undertaken by a Mauritian investor) has contributed to local infrastructure development, including transport infrastructure, water supply, electrification of a village and upgrading a school and a hospital in that village. These are important considerations for governments when signing investment contracts or negotiating for large-scale investments in agriculture with foreign investors.

C. Climate change mitigation

39. Domestic and foreign investment can also contribute to combating climate change effects and there is considerable potential for interaction between the two. The issue of combating climate change involves mitigating its effects as much as possible (and economically reasonable), as well as adapting to its environmental, economic and social impacts. Mitigation lessens the degree to which our activities change the climate system (e.g. green-house gas emissions (GHG) through industrial activity) and thus reduces all impacts of climate change. Adaptation consists of deliberate actions undertaken to reduce the adverse consequences as well as harness any beneficial opportunities stemming from climate change.

Table 5. Global incremental annual investment needs by sector, 2011–2015 and 2026–2030
(Billions of euros per year)

Sector	2011–2015	2026–2030
Power	52	148
Petroleum and gas	6	18
Industry	62	95
Transport	48	300
Buildings	124	198
Waste	9	8
Forestry	15	43
Agriculture[a]	0	0
Total	317	811

Source: McKinsey (2009).
[a] No incremental investment does not mean that there is no need for significant changes in agricultural practices.

40. This section focuses primarily on mitigation because the required investment for mitigation – for immediate actions – is believed to be higher, with a high scope for foreign–domestic and private–public interaction. The World Bank (World Bank, 2009) estimates annual incremental adaptation costs by 2030 to range between $28–$100 billion, while the costs for mitigation range between $139–$175 billion (with the associated investment needs being much higher) (table 5).

(a) The effects of current climate policy on FDI

41. The Kyoto Protocol acknowledges that developing countries have the right to develop economically as today's developed nations did in the past, and thus does not assign binding GHG reduction targets to them. The Kyoto Protocol has also established flexible

mechanisms allowing developed countries[4] to reach their targets cost-efficiently, in particular emission trading, joint implementation and the Clean Development Mechanism (CDM). Emission trading is based on the distribution of emission allowances to developed countries that correspond to their agreed targets. In addition, developed countries can decide to generate additional project-based emission allowances by investing in GHG-reducing projects in other developed countries (joint implementation) or developing countries (CDM), the latter being the focus of this issues note. In the absence of binding targets, the CDM awards credits to projects in developing countries that reduce emissions with respect to a hypothetical baseline scenario that represents the emissions that would have occurred in the absence of the project activity. In doing so, the CDM pursues two goals, namely to assist developed countries in complying cost-efficiently with their targets and to assist developing countries in their pursuit of sustainable development by transferring financial resources and low carbon technologies with sustainability co-benefits.

42. The CDM market is growing at double digit rates and represented a market volume of $6.5 billion[5] in 2008, which is assumed to have leveraged additional investment for clean energy projects (Capoor and Ambrosi, 2009). The CDM's biggest success is probably the establishment of an extensive network of companies involved in clean technologies with different specializations, sizes and geographic backgrounds (Schneider *et al.*, 2009).

43. With respect to CDM, from the perspective of investment and especially FDI, four issues are of particular importance. First, the doubts about the additionality of CDM projects raises questions about how much capital has been additionally invested. Second, many projects are financed unilaterally – i.e. domestic entities fund the project and sell the certified emission reductions on the spot market – and thus do not contain any longer-term foreign investments. Third, the distribution of CDM projects has strongly tilted towards large industrializing countries such as Brazil, China, India, Mexico and Republic of Korea. While this may be understandable because of secular drivers to investment, this trend has also been driven by the amount of mitigation opportunities available and the quality of the CDM institutions in these countries.

44. While the CDM tries to incentivize the diffusion of clean technologies on a project-by-project basis – thus only targeting the very late stages of respective value chains – analysis of cross-border mergers and acquisitions, greenfield and joint venture data indicate that other, often larger-scale, strategic deals are happening in clean technologies. It is likely that these deals are driven by anticipated climate and renewable energy policies, as well as considerations about market potentials in terms of natural resources (wind, solar, biomass, etc.) and skilled human resources to research, manufacture and operate a technology.

45. In conclusion, current international climate policy is not sufficiently driving investment in general and FDI in particular. Some investments are occurring due to national policies or market potentials but need to be increased significantly. At the same time, much of the requisite knowledge and technology needed to enhance productive capacities in developing countries resides with TNCs, primarily from developed countries. It is therefore essential to encourage such investment (as well as by domestic enterprises) to boost capacities for climate change mitigation in developing countries.

[4] In the following, "developed countries" refer to those countries that have taken on binding emission reduction commitments under the Kyoto Protocol while "developing countries" refer to those that have ratified the Kyoto Protocol but have been exempted from binding emission reduction commitments.

[5] The amount refers to only primary transactions. It would be more than $26 billion if all secondary transactions to the projects were covered (World Bank, 2009).

(b) Policies for investment in low carbon productive capacities

46. Future climate policy regimes will take into account, and be determined by, among others, country differences, sector differences and the technology cycle, i.e. stages of technological maturity (R&D, demonstration, deployment, diffusion and commercial maturity). In each country, a crucial question is how to incentivize the relevant entities, including TNCs, to develop or diffuse the necessary/relevant technologies or expertise. One major challenge is to leverage additional private capital via market mechanisms, public funding or international and, especially, national policies tailored to national circumstances (e.g. efficiency standards for buildings).[6] Of crucial importance is the extent to which investment for mitigation will be domestic or foreign, and whether it will be public or private. This fundamentally shapes the policies to be put in place. A critical question in this respect is also how these different investments from different sources might interact synergistically, whether as complements or partners – for instance in PPPs. Some examples of key policies include:

(a) Technology transfer and IPRs. One relevant discussion here is the extent to which host developing countries should create conducive conditions and provide incentives to foreign firms (including IPR enforcement) in order to encourage TNCs to locate their technology intensive low carbon activities there (and to generate new varieties of such technologies and/or improvements on existing ones). However, while recognizing that there are potential benefits to encouraging TNC involvement in low carbon productive capacities in a host country, this should not be at the expense of domestic companies, private or public. An optimal mix of foreign/domestic investment should be sought, with a view to encouraging the transfer of low carbon technologies to both the domestic economy and domestic enterprises. Governments can support collaborative arrangements such as joint ventures and PPPs (e.g. in electricity generation), as well as examine the role that IPRs play in encouraging, for example, incremental innovation on climate technologies as well as greater access and benefit sharing of biodiversity resources;

(b) Investment promotion targeting "green" investment, including FDI, is still a field insufficiently explored and best practices in green investment promotion are still to be established.[7] Such initiatives require a better understanding of company motivations for undertaking these investments. "Green" FDI promotion should however be mainstreamed into national economic planning – with a significant role for domestic private and public enterprises – as there are clear areas for mitigation such as carbon-neutral renewable energy technologies, as well as highly efficient conventional technologies in industries for which climate change is just one of many issues. In targeting green investment, it is important for governments to avoid the relocation of polluting industries to their economies (whether by foreign or local companies);

(c) Developing country nationally appropriate mitigation actions (NAMAs). The concept of registering NAMAs – even if not driven by carbon market incentives – has been proposed in order to acknowledge developing country action in the absence of binding targets. While the majority of funding might come from domestic sources, either directly from governments or from private capital incentivized by appropriate policies, there can be international public funding for technological assistance as well. Inasmuch as both domestic and foreign investment are sought in implementing national mitigation action, the whole investment promotion toolbox is open for governments. In addition, industrial

[6] Interface issues between trade, competition, industrial policies and FDI are drawing much attention lately.

[7] However, some investment promotion agencies (e.g. the investment promotion agency in the State of Oregon in the United States) have promoted "green" FDI (UNCTAD, 2001).

policies, particularly with a well-designed energy policy, are likely considered by TNCs as essential location advantages (albeit of more relevance to some industries than others), and at the same time they create conducive conditions for domestic investors;

(d) Public finance mechanisms (national and international). Public finance mechanisms are another set of options that have been proposed to encourage foreign and domestic investment in low carbon production. Most recently the United Nations Environment Programme (UNEP) finance initiative (UNEP, 2009) proposed five mechanisms to address constraints for private sector action on climate change mitigation. First, in order to improve country risk cover, one could build on experience from the World Bank's Multilateral Investment Guarantee Agency or bilateral insurance schemes by expanding risk coverage and providing support to low carbon funds. Second, organizations providing country risk cover could also provide low carbon policy risk cover, thereby supporting the development and implementation of NAMAs. Third, currency funds offering cost-effective hedges for local currencies, which would otherwise not be available in the commercial foreign exchange markets, could be shored up through public finance. The Currency Exchange Fund, supported by the Dutch Ministry for Development Cooperation, is such an example. Fourth, some publicly funded bodies could undertake early stage project execution for infrastructure projects, such as securing consents and offtake arrangements.[8] Finally, the public sector could invest directly in low carbon funds via subordinated or "first loss" equity. In this instance, any money made by the fund is directed to private investors first, with the public sector receiving a return on its investment when private sector returns meet a predefined threshold. This reduces risk for private investors, including foreign ones (UNEP, 2009).

47. All the above mechanisms can individually or collectively be tailored to specific country and sector conditions. Most importantly, different vehicles such as investment funds will have to direct their resources differently to the different stages of technological maturity. For example, while grants could be used for demonstration projects, loan facilities and mezzanine debt would be targeted to technologies/projects closer to competitiveness. Overarching all of the public finance mechanisms is the question of where the funding comes from and who governs these funds on which disbursement criteria.

III. Towards implementing policy measures for capacity-building

48. FDI driving out healthy domestic investment is not an ideal investment situation. Under competitive conditions it is normal for inefficient investments to be driven out of the market, resulting in a more productive and efficient economy. However, developing country firms may face various impediments because the playing field is not level. For instance, TNCs often have better access to financing than domestic firms. It is imperative for policymakers to ensure that the market conditions faced by domestic firms are commensurate to those faced by TNCs and, in certain cases (e.g. in supporting fledgling industries), slightly skewed in their favour. At the same time an environment conducive to effective joint investment by foreign and domestic investors should be fostered. For instance, linkage programmes that strengthen the relationship between foreign affiliates and domestic firms could be encouraged.

49. When designing policies concerning FDI and domestic investment in agricultural production, developing country policymakers need to consider how such involvement could best serve their long-term development objectives. This can be achieved by: (i) creating a conducive environment for attracting FDI; (ii) matching FDI with domestic endowments to

[8] Infraco and Infraventures are examples.

create positive synergies; (iii) promoting linkages between foreign affiliates and domestic entities (particularly small farmers); and (iv) ensuring that a sufficient proportion of the value added is retained in the host economy and that the economic benefits are fairly shared among the various stakeholders. At the same time, policymakers need to deal with the possibly far-reaching social and environmental consequences of foreign investment in agriculture. Strategies have to be developed to prevent small-scale farmers from being squeezed out, secure land tenure for local farmers, uphold the right to food and encourage those forms of agricultural production that are environmentally sustainable.

50. When considering strategies and policies concerning FDI and domestic investment for climate change mitigation, developing country policymakers also need to consider their short- and long-term objectives. It is imperative to determine if the current development strategy is in line with climate change mitigation, or if adjustments need to be made in line with this long-term imperative. Country strategies will vary depending on the country's specific situation and endowments, for instance in determining which sectors to focus on in the short-term and which are most promising in the long run. Particularly important in this respect – especially to align the potentially disparate climate change mitigation and development objectives – is the choice of the technology utilized and the way it is acquired, e.g. technology transfer or R&D by TNC affiliates, among other options. A sector-specific, dedicated and stable policy environment will need to be created to attract and leverage foreign (and domestic) investment for climate change mitigation and development. Various policy tools to attract such investment can be employed, the choice of which will be context-specific.

51. Host country strategies concerning TNC participation in developing countries have changed over time and no "one size fits all" solutions exist, due to significant variations in policies by countries, industries and type of TNC involvement. Infrastructure, agriculture and climate change mitigation, moreover, are all sectors or issues where a careful, dedicated delineation of policy is essential. Nevertheless, there is ample room for creating "win-win" situations, provided that the institutional arrangements are carefully designed to ensure a fair sharing of the benefits between host countries (domestic investors/partners) and foreign investors.

52. Experts may wish to discuss the following questions, issues and policy measures, among others, with respect to enhancing productive capacities through FDI and domestic investment:

General

(a) What is the optimal balance between FDI and domestic investment? How is this assessment best made? If crowding out takes place, what policy measures should be required to correct this situation?

(b) How is potential for creating linkages and synergies between domestic and foreign investment best realized? Could TNCs from the South and sovereign wealth funds play a greater role in this context?

(c) What further work should be undertaken to understand and better exploit synergies between FDI and domestic investment, including in the areas of agriculture, infrastructure and climate change?

In agriculture

(a) Do you support the idea of establishing international guidelines for major land acquisitions in agriculture? What should be the main elements and core principles of such guidelines?

(b) What are, in your view, the main obstacles for efficient contract farming arrangements, and how should they be tackled? What specific development contribution would you expect from foreign investors in contract farming arrangements?

(c) Where do you see as the main obstacles for enhancing host country capabilities in agricultural R&D (especially adaptive R&D) and how can these be overcome? Can certain intellectual property policies help to improve developing country capabilities in agricultural R&D?

(d) What contribution would you expect from foreign investors, and what should be the main elements of cooperation between foreign investors and the host country in agricultural infrastructure development?

In climate change mitigation

(a) Which sectors best lend themselves to foreign private sector participation for climate change mitigation in developing countries? What role can local private companies and the public sector play, and how is an optimal result, from a developing country perspective, best achieved?

(b) How are countries trying to ensure linkages of climate change-relevant FDI and domestic companies? Are there crowding in or out effects of FDI and how are these being dealt with? Are there emerging best practices (or examples) of countries receiving technologies owned by foreign TNCs and diffusing them to domestic companies in the area of climate change-relevant technologies?

(c) Are there any “best practice” examples of developing country strategies and policies towards TNCs and FDI in climate change mitigation efforts, especially in ensuring an optimal mix of foreign and domestic FDI? What lessons can be drawn for other countries?

(d) How can development partners, including developed countries, support developing countries’ mitigation efforts beyond CDM-type market mechanisms?

(e) Is there a role to play for investment promotion agencies in targeting “green” investment?

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